

WHAT IS CLAIMED IS:

1. A 3D model retrieval method of retrieving a 3D model similar to the specified 3D model from a plurality of 3D models stored as objects to be
5 retrieved in a database by using various feature values calculated from the selected 3D model, the 3D model retrieval method comprising:

specifying at least one of the selected 3D model and a subelement which is a part of the selected 3D
10 model as a retrieval key;

acquiring the feature values of the subelements included in the 3D model specified as the retrieval key and data on information about the relationship between the subelements;

15 acquiring the feature values of the subelements included in the 3D models stored as objects to be retrieved in the database and data on information about the relationship between the subelements;

20 calculating the similarity between the 3D models to be retrieved and the 3D model acting as the retrieval key using the acquired feature values about the subelements to be retrieved, the acquired data on information about the relationship between the subelements, the acquired feature values about the subelements of the retrieval key, and the acquired data on information about the relationship between the subelements; and

displaying the result of retrieval on the basis of
the calculated similarity.

2. The 3D model retrieval method according to
claim 1, wherein the subelements of the 3D model are
5 structured and

information on the structuring is the data on the
relationship.

3. The 3D model retrieval method according to
claim 2, wherein the calculating the similarity is
10 using the feature values of the subelements at each of
the hierarchical levels structured.

4. The 3D model retrieval method according to
claim 2, wherein the specifying as a retrieval key
includes specifying each of the subelements at the
15 lowest level among the selected subelements as
a retrieval key.

5. The 3D model retrieval method according to
claim 4, wherein the calculating the similarity
includes calculating the similarity between the
20 subelements at the lowest level specified as the
retrieval keys and the 3D model to be retrieved.

6. The 3D model retrieval method according to
claim 1, wherein the 3D model has attribute information
corresponding to the subelements, and

25 the displaying the result of retrieval includes
displaying attribute information corresponding to the
subelements at the same time.

7. The 3D model retrieval method according to
claim 1, wherein the displaying the result of retrieval
includes displaying the subelements in different form
according to the similarity of the subelements of the
5 3D model determined by calculating the similarity.

8. The 3D model retrieval method according to
claim 1, wherein the displaying the result of retrieval
includes displaying a subelement whose similarity is
the highest in different form from the other
10 subelements.

9. The 3D model retrieval method according to
claim 1, wherein the displaying the result of retrieval
includes displaying a subelement of the 3D model
specified as the retrieval key in different form from
15 the other subelements.

10. A 3D model retrieval system which retrieves
a 3D model similar to the specified 3D model from
a plurality of 3D models stored as objects to be
retrieved in a database by using various feature values
20 calculated from the selected 3D model, the 3D model
retrieval system comprising:

25 a catalogue selecting section configured to
specify at least one of the selected 3D model and
a subelement which is a part of the selected 3D model
as a retrieval key;

a retrieval key feature values acquisition section
configured to acquire the feature values of the

subelements included in the 3D model specified as the retrieval key at the catalogue selecting section and data on information about the relationship between the subelements;

5 a retrieval object feature values acquisition section configured to acquire the feature values of the subelements included in the 3D models stored as objects to be retrieved in the database and data on information about the relationship between the subelements;

10 a degree-of-similarity computing section configured to calculate the similarity between the 3D models to be retrieved and the 3D model acting as retrieval key using the feature values about the subelements to be retrieved and data on information about the relationship between the subelements acquired by the retrieval key feature values acquisition section and the feature values about the subelements of the retrieval key and data on information about the relationship between the subelements acquired by the retrieval object feature values acquisition section;

15 and

20 a display section configured to display the result of retrieval on the basis of the similarity calculated by the degree-of-similarity computing section.

25 11. A 3D model retrieval system which retrieves a 3D model similar to the specified 3D model from a plurality of 3D models stored as objects to be

retrieved in a database by using various feature values calculated from the selected 3D model, the 3D model retrieval system comprising:

catalogue selecting means for specifying at least
5 one of the selected 3D model and a subelement which is a part of the selected 3D model as a retrieval key;

retrieval key feature values acquiring means for
acquiring the feature values of the subelements
included in the 3D model specified as the retrieval
10 key at the catalogue selecting means and data on information about the relationship between the subelements;

retrieval object feature values acquiring means
for acquiring the feature values of the subelements
15 included in the 3D models stored as objects to be retrieved in the database and data on information about the relationship between the subelements;

degree-of-similarity computing means for calculating the similarity between the 3D models to be
20 retrieved and the 3D model acting as retrieval key using the feature values about the subelements to be retrieved and data on information about the relationship between the subelements acquired by the retrieval key feature values acquisition means and the feature values about the subelements of the retrieval key and data on information about the relationship between the subelements acquired by the retrieval object feature

values acquiring means; and
display means for displaying the result of
retrieval on the basis of the similarity calculated by
the degree-of-similarity computing means.